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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,775	01/19/2001	Friedmund Nagel	5646-00300	9805

7590

06/22/2004

Jeffrey C. Hood  
Conley, Rose, & Tayon, P.C.  
PO Box 398  
Austin, TX 78767-1246

EXAMINER
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WOO, STELLA L

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

14

## Office Action Summary

**Application No.**

09/765,775

**Applicant(s)**

NAGEL, FRIEDMUND

**Examiner**

Stella L. Woo

**Art Unit**

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 8, 13, 17, 20, 23-27, 30-31, 35, 39, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain et al. (US 5,457,749, hereinafter "Cain") in view of Tomisawa et al. (US 5,850,458, hereinafter "Tomisawa").

Cain discloses a device (electronic muffler10; Figures 1 and 7) having:

at least one first sound transducer (microphone assembly 72; col. 6, lines 5-11);  
an electronic control unit (cancellation signal generator 90; col. 6, lines 12-15); and  
at least one second sound transducer (actuators 50 and 52; col. 5, lines 15-23).

Cain differs from claims 1-5, 8, 13, 17, 20, 23-27, 30-31, 35, 39, 42 in that it does not specify that the microphone converts sound waves into first signals which are a measure of the frequency, amplitude and phase of the sound waves. However, Tomisawa teaches the well known detection of a sound wave's frequency, amplitude and phase in order to generate a cancellation signal having the same frequency, same amplitude and opposite phase (col. 1, lines 36-42; col. 4, line 61 – col. 5, line 14) such that it would have been obvious to an artisan of ordinary skill at the time of invention to determine the frequency, amplitude, and phase of detected sound wave, as taught by Tomisawa, within the muffler device of Cain in order provide an effective cancellation signal.

Art Unit: 2643

Regarding claims 3, 20, 25, 39, 42, in Cain, speakers 50 and 52 are protective with Kevlar coating and insulative material 42 and casing 12 (Figure 1; col. 4, lines 42-64).

Regarding claims 8, 30, in Cain, sound absorbing material within chambers 61, 68, 70 and pipe liner material provide additional silencing (col. 5, lines 5-12; col. 6, lines 23-29).

Regarding claims 9, 17, 20, 31, 39, 42, in Cain, radiators 480A and 480B provide cooling (col. 13, lines 4-10).

3. Claims 6, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain in view of Tomisawa et al., as applied to claim 1 above, and further in view of Geddes (US 5,432,857).

The combination of Cain and Tomisawa differs from claims 6 and 28 in that it does not specify a catalytic converter. However, Geddes teaches the well known inclusion of a catalytic converter (54) as forming part of the exhaust conduit 44 (col. 5, lines 50-67) such that it would have been obvious to an artisan of ordinary skill that a catalytic converter, as taught by Geddes, would form a part of the exhaust conduit of the combination of Cain and Tomisawa.

4. Claims 7, 18, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain, Tomisawa and Geddes, as applied to claims 6, 17, 28, above, and further in view of PCT WO 97/20307 (hereinafter "Everingham").

The combination of Cain, Tomisawa, and Geddes differs from claims 7, 18, 29 in that it does not specify the sound waves being propagated essentially in a direction of a longitudinal axis of the exhaust line. However, Everingham teaches the well known propagation of noise canceling waves in the direction of a longitudinal axis of a duct housing (Figure 1) such that it would have been obvious to incorporate such longitudinal propagation, as taught by Everingham,

Art Unit: 2643

within the combination of Cain, Tomisawa, and Geddes so that the canceling wave is directly propagated along the pipe, rather than being reflected against the pipe surface.

5. Claims 10-12, 14-16, 19, 22, 32-34, 36-38, 41, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain and Tomisawa, as applied to claims 1, 13, 17, 20, 23, 35, 39, 42 above, and further in view of Fischer et al. (US 5,748,748, hereinafter "Fischer").

The combination of Cain and Tomisawa differs from claims 10-12, 14-16, 19, 22, 32-34, 36-38, 41, 44 in that it does not specify a comparator unit, an output unit or a service monitoring unit. However, Fischer teaches the desirability of incorporating such a diagnostic feature within a vehicle noise modification system by comparing detected oscillations with a defined threshold oscillation and emitting an acoustical and/or optical signal to indicate an abnormality (Abstract; col. 9, lines 20-42; col. 10, line 55 – col. 11, line 67). It would have been obvious to an artisan of ordinary skill to incorporate such a diagnostic device, as taught by Fischer, within the noise cancellation system of Cain and Tomisawa in order to provide an additional service to the vehicle owner, that is, to indicate detected abnormalities while reducing engine noise.

6. Claims 21, 40 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Cain and Tomisawa, as applied to claims 20, 39 and 42, in view of Geddes, as applied to claims 6, 28, and further in view of Everingham for the same reasons applied to claims 7, 18, and 29.

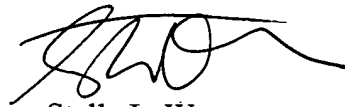
### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Eatwell shows another active noise control system. Johnson shows an engine diagnostic system.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stella L. Woo whose telephone number is (703) 305-4395. The examiner can normally be reached on Monday-Tuesday, Thursday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703) 305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Stella L. Woo  
Primary Examiner  
Art Unit 2643